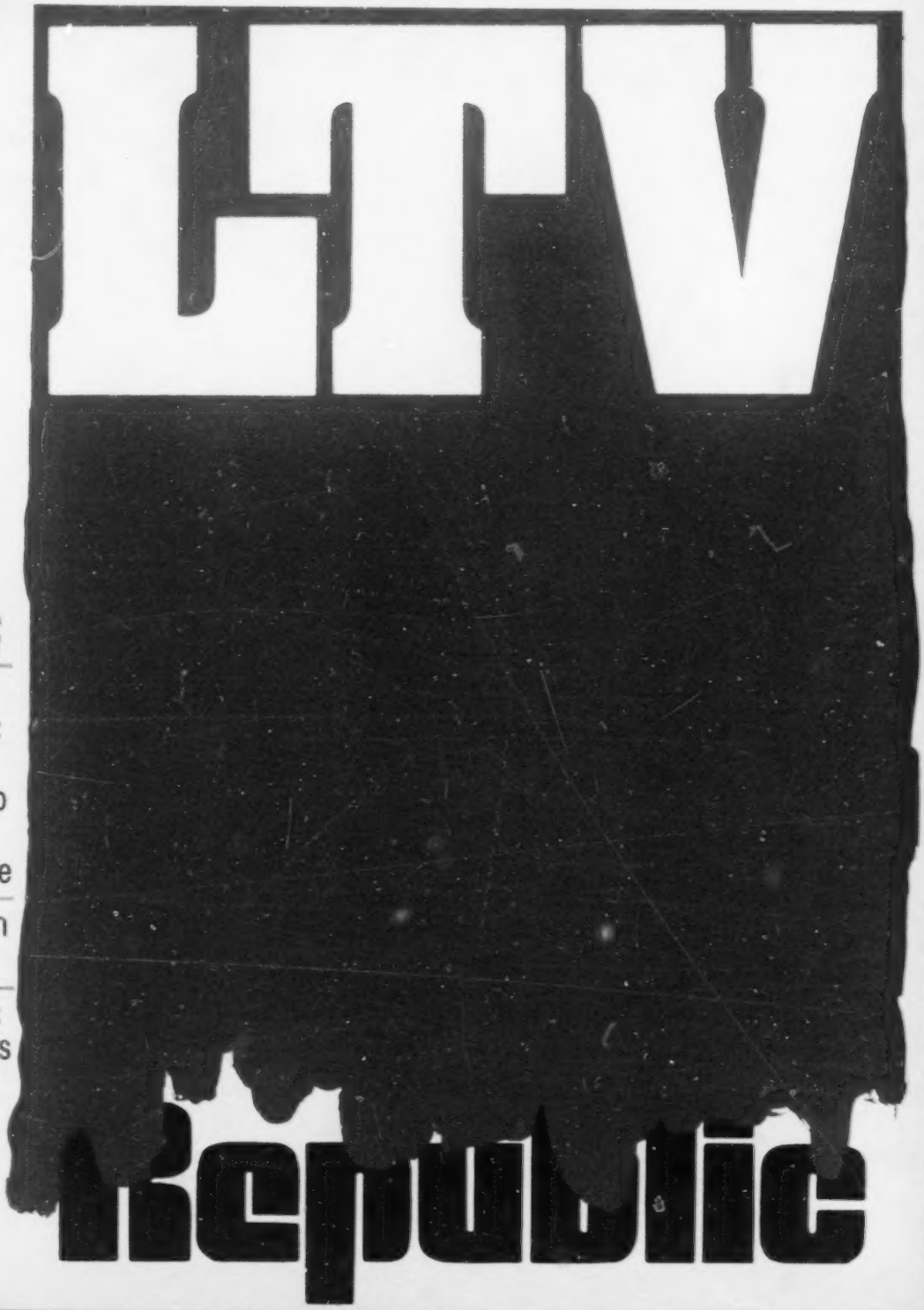
Chilton's
OCTOBER 21, 1983

IRON AGE

THE MAGAZINE FOR METALWORKING MANAGEMENT



LTV CLOSES IN ON REPUBLIC

Manufacturing Systems Series 45: Industrial Data Bases — The Key to Productivity in the Factory of the Future

Aluminum Back on Track in '84

Legislative Update: Congress Continues to Skirt the Big Issues in Industry

VOL. 226, NO. 26

IRON AGE

OCTOBER 21, 1983

COVER STORY

57 LTV-REPUBLIC MERGER HERALDS STEEL INDUSTRY CHANGES
If the combination is permitted, it will create the second largest steel company and could open the door to further steel mergers.

FEATURES

45 CONGRESS: MOVEMENT, BUT LITTLE PROGRESS
While the nation's lawmakers have enacted several pieces of legislation in this session, they have ducked many crucial issues.

49 GAINS IN OUTPUT MARK ALUMINUM'S RECOVERY
The industry seems less inclined to consider shutdowns of uneconomical capacity with shipments on the rise and prices firmed.

66 VALUE ANALYSIS: MAKING IT BETTER AND LESS COSTLY
These multi-skilled teams are working to pinpoint ways to improve products and processes—and make them cost less.

74 MMS SERIES 45: INDUSTRIAL DATA BASES
The key to productivity in the factory of the future, a data base gets information where needed. Computer data can swamp a firm.

90 U.S. AUTOMAKERS WANT TO CURB COSTS AND DEFECTS
The domestic industry realizes that it can't sell products that are poorer in quality than imports, yet expensive as well.

NEWSFRONTS

7 EDITORIAL
Why are all these people happy?

23 METALWORKING NEWSFRONT
Volkswagen tools up to produce its successor to the Rabbit.

42 BUSINESS FINANCEFRONT
Corporate profits are swelling in volume and improving in quality.

60 METALWORKING ORDER TRENDS
Durable goods orders showed marked improvement in August.

65 YOU AND YOUR JOB
Employees and the company benefit from a day care center.

73 TECHFRONT
A high-speed scanning system examines coatings for machinery.

99 PRODUCTS NEWSFRONT
Roller burnishing is an effective alternative to some finishing.

109 MATERIALS NEWSFRONT
Mini-mills are benefitting from the consumer-led recovery.

116 BUSINESS FORECAST
The leading indicators point to a slower recovery.

DEPARTMENTS

8 EDITORIAL STAFF
12 LETTERS
34 PEOPLE ON THE MOVE
36 INDUSTRIAL BRIEFS
97 FREE LITERATURE
106 BUSINESS STAFF
106 AD INDEX
107 MANAGEMENT SERVICE CARD
112 P&P DATA 10/10
113 FERROUS SCRAP 10/10
114 CLEARING HOUSE

NEXT ISSUE

Technology transfer within industry.

IRON AGE (ISSN 0164-5137) is published 24 times a year by CHILTON COMPANY, Chilton Way, Radnor, PA 19089, appearing on the first Monday and third Friday each month. Chilton Co. is a division of American Broadcasting Companies, Inc., New York, N.Y. Second Class Postage Paid at Wayne, PA 19087 and additional mailing offices. IRON AGE is sent on a controlled free basis to qualified managers in U.S. metalworking companies. Non-metalworking companies, services, government, institutions, schools and colleges, $42 one year. Canada, $42 year. Foreign, $49 one year. Single copies, $2.50. Cable Chilton, Philadelphia.
Send address changes to IRON AGE, P.O. Box 1440, Riverton, N.J. 08077

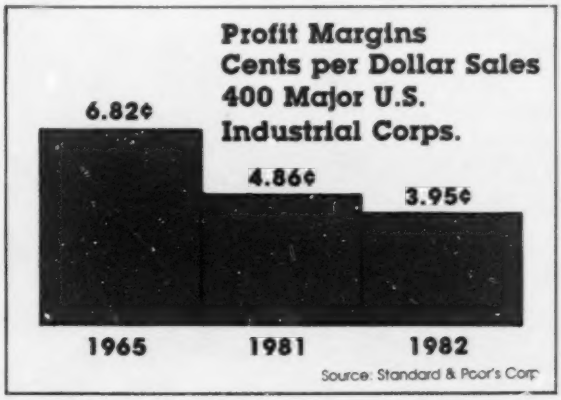
BUSINESS FINANCEFRONT

Recovery brightens corporate bottom lines—and more

Profits of U.S. corporations are bigger—and better.

Earnings of companies are not only swelling in dollar volume, but they are also improving in terms of profit margins—profits earned per each dollar of sales—and in returns on investment.

Last year, profit margins of U.S. industrial corporations hit a 30-year low, according to Standard & Poor's Corp.



They came to 3.95 cents earned for each dollar of sales. This was down from 4.86 cents in 1981.

A really stark perspective on last year's poor showing in margins is seen in comparing it with a peak margin of 6.82 cents reached in 1965.

Profit margins are a prime indicator of corporate financial health. For example, a company could have a steady rise in dollar volume profits and still be heading into trouble, if its margins are slipping.

This situation would indicate that profits were sustained only by rising sales volume, that less and less was actually being earned on each dollar of sales. A setback in sales volume, in such a scenerio, could quickly lead to net losses for a company. The company might not be able to ride out bad times—which seem to occur and recur quite frequently in the U.S. economy.

All this is why any news of improvement in corporate profit margins is good news. Standard & Poor's analysts say that margins are now showing gains throughout U.S. industry following the margins debacle of last year.

Further good news comes from the Federal Trade Commission (FTC), which monitors profit margins of manufacturing companies. The FTC says after-tax profits on sales of these companies rose to 4.2 pct in the second quarter of this year, up from 3.2 pct in the first period.

Manufacturers' profit margins still have a long way to go to recoup ground lost during the last three recessions. In 1974, that margin came to 5.9 pct.

Another good sign for earnings health of manufacturers is seen in returns earned on shareholders' equity. This is the big-scale corporate return on investment. In the second quarter of this year, this return for all manufacturers came to 11.1 pct, up from 8.0 pct in the first quarter.

All this improvement in margins and returns is abetted by the second quarter dollar profits showing for all U.S. corporations. The U.S. Commerce Department reports these after-tax earnings rose to $127.2 billion at an annual rate, up about 18 pct from the opening period of the year. The $19 billion rise was the largest for any quarter.

In dollar volume profits, the gains are real ones. Inflation is no longer severe enough to distort reported data with 'paper' profits.

Recession-haunted companies are slow to pay bills

Many companies are only slowly snapping back from the thumping they took through two recessions in the last three years. Executives in these companies still try to keep their operations lean and keep a tight hold on cash. This sometimes shows up in slow payment on due accounts.

U.S. companies reported that a smaller percentage of their accounts receivable were paid when due in the second quarter than in the first quarter. On a seasonally adjusted basis, paid-on-time accounts receivable in the second quarter came to only 74.5 pct of all due accounts. That was down from 75.7 pct in the first quarter. In fact, the second quarter on-time payment percentage was the lowest since the cyclical bottom of 74.3 pct hit in the opening period of last year.

These findings were revealed by TRW Inc.'s Services Div. which regularly monitors business credit accounts.

TRW analysts don't see any new slow-pay trend setting in. "The second quarter statistic," they say, "is in line with the trend of the last three years."

That trend, point out the credit analysts, shows the seasonally adjusted percentage of current accounts receivable "ranging between 74 pct and 76 pct since the middle of 1980."

On-Time Payments, Pct On Current Accounts, Seas. Adj.

1982			1983		
1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.
74.3	75.2	75.5	75.5	75.7	74.5

High long-term real interest rates hurt plant investment

"Capital spending is one thing we're really sweating out."

That's what Robert Ortner, the U.S. Commerce Department's top economist, said after announcing a strong showing for the U.S. economy in the third quarter.

In the aftermath of the GNP announcement, several private economists targeted in on the weak capital spending sector. Their conclusion: High interest rates on long-term bonds are keeping a lid on plant investment.

As of mid-September, according to Moody's Investor Service, the average yield on industrial corporate bonds was 12.5 pct. With the economy's inflation rate at about 3.5 pct, this puts real long-term rates at near-record alltime highs.

Explains one financial executive, "If my company issued a bond to finance plant investment, we would be selling goods at low price levels reflecting the low inflation rate. But we would be paying off the loan with highly-inflated, or high-price, dollars."

STEADY GAINS IN OUTPUT AND PRICES MARK ALUMINUM'S RECOVERY

The industry seems less inclined to consider shutdowns of uneconomical capacity now that shipments are on the rise and prices have firmed.

BY ROBERT J. REGAN

When aluminum industry executives gather at the annual meeting of the Aluminum Association this week in Washington, they will look back on 1983 as the year demand returned and look forward to 1984 as the year they expect profits to do the same.

It's no secret that a lot of red ink was spilled during the first half—in the operating profit columns, at least. About the best off-the-cuff assessment anyone would offer about the third and fourth quarters has been that things are edging up into the black.

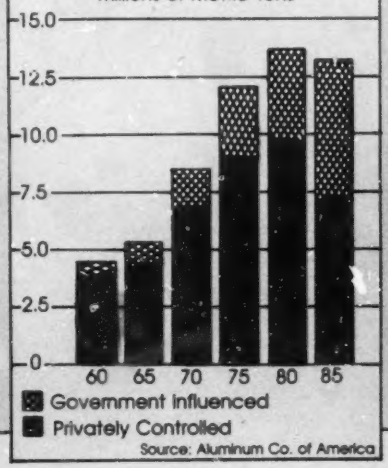
During annual meeting time last year, the buzzword was "leaner" and was used to describe the condition the industry was striving toward via management and work force pruning, shifts in product mix, shutdown and phasing down of unprofitable products and facilities, careful management of inventories and cash flow. The process has been helped along by steady improvement in demand and aluminum prices, but the most visible manifestation to date has been a steady--and continuing—rise in aluminum production and recovery of aluminum scrap from cans and other sources.

A year ago, prices were on the floor, particularly for ingot, and most of the talk was about permanent shutdown of uneconomical ingot capacity. But, with 1983 shipments starting to look like a 15 pct gain on last year's poor volume and industry analysts projecting another 10-15 pct rise in 1984, there doesn't seem to be much of a hurry. (And the Bonneville Power Administration's latest rate proposals may mean more second thoughts about what primary capacity goes down and where.)

Some capacity has come off the

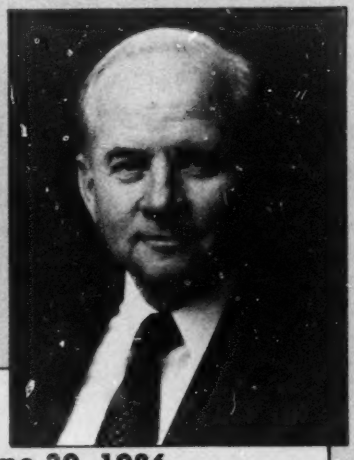
C.W. Parry
Chairman, Aluminum Co. of America

Comparison of Free World Primary Aluminum Capacity Ownership



Source: Aluminum Co. of America

C.F. Fetterolf
President, Aluminum Co. of America



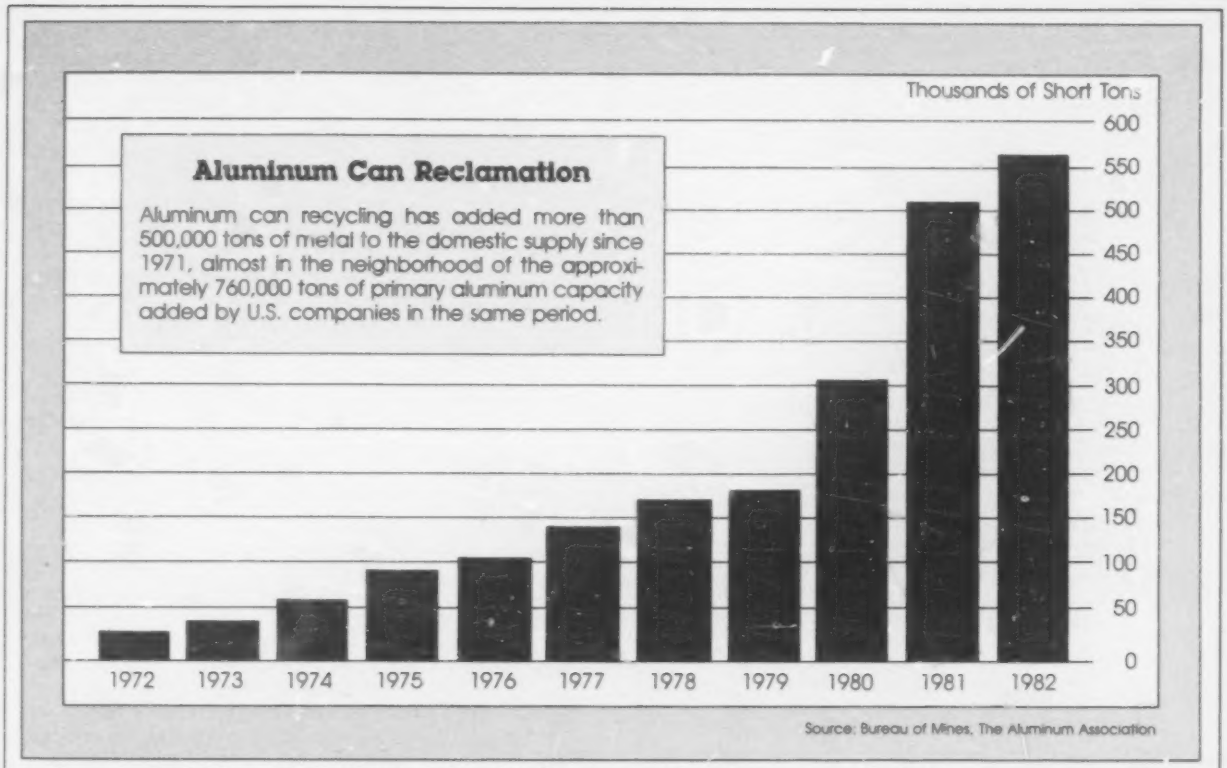
Free World Primary Aluminum Capacity June 30, 1983 vs. June 30, 1986

(Thousands Metric Tons)

	June 30, 1983	June 30, 1986
Nor'h America	6,108	6,221
Europe	3,646	3,653
Latin America	1,063	1,308
South Asia	920	1,030
East Asia	800	750
Australia-New Zealand	713	1,106
Africa	623	623

Source: International Primary Aluminum Institute, London.

Projected growth in free world primary aluminum capacity falls short of 6 pct over the next three years. Before the end of that period, according to calculations by Aluminum Co. of America, about half total primary capacity will be accounted for by "government-sponsored smelters without an assured market or fabricating affiliate for most of their metal."



books since the depths of the 1981-82 slump, mainly in Japan and the United States. More remains in that limbo that was defined as "idled capacity that may never be reactivated."

Aluminum Co. of America, which took its gas-fueled Point Comfort, Texas, smelter off the books last year, is taking its remaining 1.56 million short tons of domestic capacity up to 100 pct to keep up with demand. Charles W. Parry, Alcoa chairman and CEO, says there is "pretty solid underlying strength—solidly based—in the domestic market. There's been some firming abroad, like Europe and Australia, but they're not improving at the rate we are."

Alcoa President C. Fred Fetterolf said bookings during September were going "at a rate that looked like they couldn't be sustained. There is some inventory building going on out there and there probably will be a period of leveling off—but that leveling off will start at a very high level.

"I would have to say the recovery looks good, not fragile, but you might get as many different answers to that question as people you ask."

Mr. Fetterolf said flat rolled business was particularly strong and that Alcoa was booking December and January business during the early weeks of September. He also said the company is weighing a major modernization program designed, among other things, to build sizable capacity to produce wider can stock. That product is finding great favor with the can companies because they can blank more cans per sheet and speed production.

He emphasized that the program "is not a matter driven by a desire to expand capacity; it's better quality and more width capacity we are after." Asked where the new equipment would go in, he indicated it probably would be Alcoa, Tenn., but added there were other options. Those presumably would be Alcoa's Warrick, Ind. facilities or a greenfield site.

William O. Bourke, president and chief operating officer of Reynolds Metals Co., noted that third quarter industry shipments "overcame the usual seasonal weakness" and were up about 16 pct from the same 1982 period. "We now project industry shipments in the fourth quarter to reach 1.74 million tons for an 18 pct gain on the depressed fourth quarter of 1982."

Asked if, in view of all the talk about a contracting primary aluminum capacity base and rising demand, the market is heading for supply stringencies in 1984-85, Mr. Bourke said, "while the supply-demand situation in aluminum may be tight during certain periods of 1984, we do not anticipate any overall shortage next year. The industry always has and always will provide the capacity necessary to meet demand."

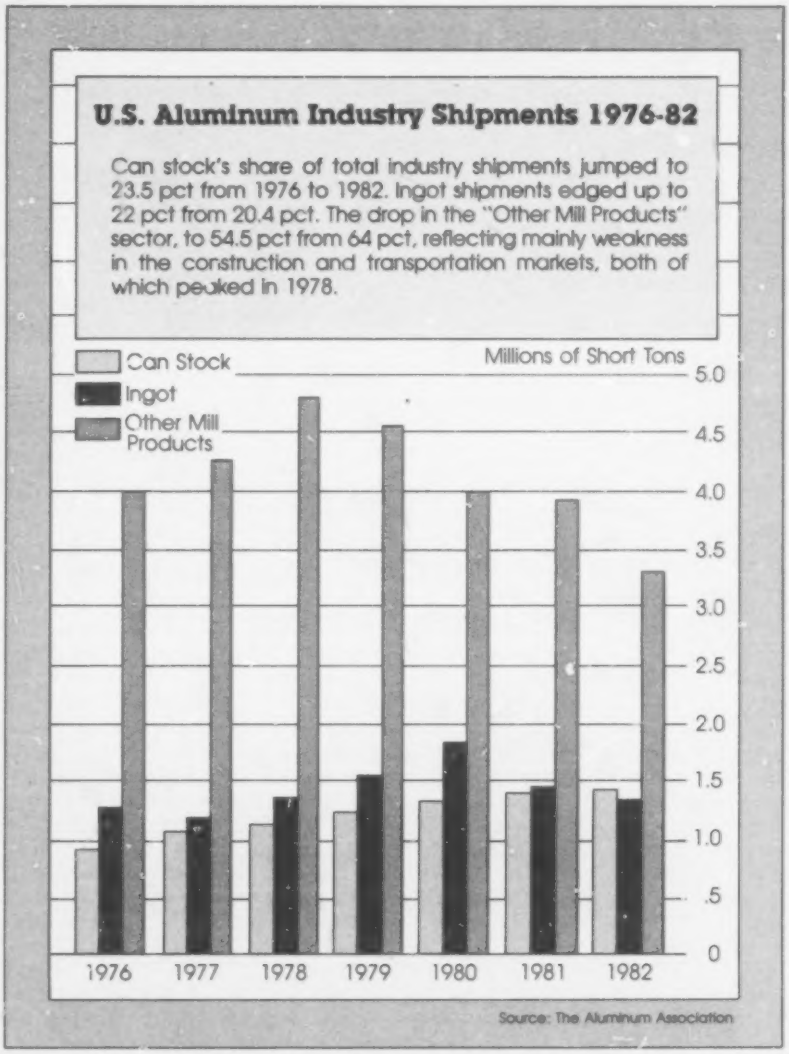
Alcoa and other integrated aluminum companies have over the past year or so pointed to the increasing influence of "stand-alone" aluminum smelters under the sponsorship of various governments that have no assured market or fabricator affiliates for large portions of their output. This output helped depress ingot prices during the recent slump and the effect was instantly visible via the London Metal Exchange's aluminum contract.

Alcoa has projected that the government-influenced smelters will account for nearly half of Free World capacity by 1985 and most of the projected/predicted smelter shutdowns have been in the private enterprise column. However, most of the integrated aluminum producers are reluctant to say that the stand-alones will be in a position to call the shots on ingot prices during boom times as they have been able to do when the market is in surplus.

Said Alcoa's Mr. Parry, "It's the whole aluminum community—when demand is down and the need to sell is there, it doesn't make any difference, and you can't say the integrated producers do one thing and the stand-alones do another."

Mr. Bourke said ingot pricing "will always be a function of supply/demand situations, regardless of who is selling or whether sales are made directly or via metal exchanges." He said aluminum will continue to become internationalized and "there will undoubtedly be significant changes in the industry worldwide. . .but no one at this juncture can predict how they might affect either pricing or various markets."

When the question was put (somewhat convolutedly) before Roy A. Gen-



tles, president and CEO of Alcan Aluminum Corp., he quipped, "Is this a question or a statement?" As for generalized projections of the probable influence of government-controlled smelters, the LME and the upcoming New York Commodity Exchange aluminum futures contract, he said, "your guess is as good as mine."

As for current and near-term aluminum business, Mr. Gentles said 1983 volume "has easily outdistanced 1982. Demand has picked up and been sustained in the building/construction and automotive markets, strong demand continues for can stock and packaging markets, and our third party ingot sales have been spectacular. The only unsettled area is distributor sheet."

Mr. Gentles also said that he does not expect any immediate pressure from the startup of Arco Aluminum Co.'s new rolling mill in Russellville, Ky. The startup may not come until the first or second quarter, he said, adding "and you don't start up a plant and immediately start selling gobs of material."

Alcoa's Mr. Fetterolf noted that the Japanese quickly followed the Aug. 1 price hike on aluminum can stock by North American producers. "Now," he said, "they probably protected themselves with metal purchases through 1983—at least through 1983, and maybe further—and they can hang in there for sometime afterward, even if it means just trading rigid container sheet for dollars. Their idea probably is to stay at it (exporting can stock) until their own requirements grow to a point that will satisfy those big rolling mills.

"How long will that take? Off the top of my head, I would say maybe five or six years."

As aluminum production and can recycling grow, more raw material is generated and there are more processors scrambling for it. Asked if the aluminum industry was about to enter a new age of mini-mills with their own scrap sources and modest rolling equipment, Reynolds' Mr. Bourke replied that most of the can stock produced today comes off modern, high-speed rolling mills that have the power, speed and shape, and gauge controls needed for the thinner gauges and stronger alloys.

Asked if the aluminum producers have moved into a position to tolerate modestly higher energy costs now that the prices are at or near recovery levels and costs are under better control, Mr. Bourke said, "Yes—but only modestly, because the price restorations and cost cutting were only catch-up moves after three years of dramatically increasing costs and depressed prices."

The aluminum producers' latest dose of rising energy costs came with the 26.8 mils power rate set by the Bonneville Power Administration. It came at a time when Alcoa, Reynolds and Kaiser Aluminum & Chemical Corp. were preparing another round of output boosts in BPA country. A. Stephens Hutchcraft, Kaiser Aluminum president, was quick to say the restarts "do not eliminate the long term problems created by the new power rates announced by BPA.

"We still consider the new rates to be excessive and they doom the Northwest reduction plants to becoming swing capacity operated only when demand for aluminum is strong and prices high enough to cover the increased costs. These plants, unfortunately, will be among the first to be closed during downturns in the aluminum business cycle—and we must remember the aluminum business is a cyclical industry."

Meanwhile, there are other aluminum producers out there—most perhaps in the government-controlled or stand-alone camps—ready to fill any gaps in the U.S. supply.

Oscar Martinez, president of Venezuela's Interalumina, a director of the aluminum-producing company, Alcasa, and the architect of that nation's vertically integrating aluminum business, late last month called the U.S. the logical outlet for Venezuela's alumina and aluminum exports.

He was uncertain whether South American producers would sell aluminum via the upcoming Comex aluminum futures contract, but said, "Venezuela will play an important role and welcomes the advent of the Comex contract."

Asked if Venezuela was having much luck with the U.S. market currently, he quipped, "Oh, we are doing our best. We managed to sell 25,000 tons to Alcoa not too long ago."□

Reprints available while supply lasts. For single copy, circle No. 86 on inquiry card. Additional copies, $1.00 each, for articles up to 8 pages. Longer ones $2.00 each. Please include payment with orders of $10 or less. Quantity reprints available. For information, write: IRON AGE, Reader Service, Chilton Way, Radnor, Pa. 19089. Ask for reprint No. 4414.

METALWORKING ORDER TRENDS

Durable goods orders show improvement during August

Durable goods orders for August showed marked improvement over July's decline.

Overall orders received in August totaled $89.3 billion. This was up $1.1 billion, or 1.2 pct, over the July volume of $88.2 billion. It was also a modest increase compared with how July rose in relation to June. Nevertheless, all signs continue to point to a positive upturn in the economy. New orders for nonelectrical machinery in August increased $0.5 billion, about 3.2 pct, to $15.3 billion, with nearly all of the specific product lines showing rises.

The largest increase from July to August occurred in transportation equipment. Orders there were up $1.3 billion—6.2 pct—to $21.8 billion. But increases in the motor vehicle and parts and aircraft industries were partially offset by a decline in shipbuilding, construction, and mining and material handling equipment.

New orders for nondefense capital goods in August increased $1.4 billion, or 6.4 pct, to $23.0 billion after an 11.2 pct decline in July.

The renewed rise in orders in August following July's drop "promises future advances" in shipments and production "though probably not as large as the exceptional gains registered earlier in the year," said Commerce Secretary Malcolm Baldrige.

The August orders-shipments data point to a speeding up of the pace of orders. During the month, incoming new orders exceeded shipments by almost $2 billion. This beefed up unfilled order backlogs and made producers more willing to rehire workers and step up production. Whenever that happens, inventories must be built up—and that means more orders flowing through the pipelines in metalworking markets.

In August, durable goods new orders totaled $89.3 billion; shipments made by these producers totaled $87.6 billion.

Another positive sign for future metalworking business activity is seen in the August data on inventories—up 0.5 pct to $170.5 billion. The August gain in inventories was slightly more than the 0.3 pct rise registered in July and significantly better than the zero gain logged from March through June.

All in all, if it hadn't been for a big lag in defense capital goods in August, the showing for the month would have been a banner one. But these defense goods orders, which often become bunched up, fell off by 34 pct in August from a hot July pace.

Source: U.S. Dept. of Commerce Billions of dollars, seasonally adjusted monthly total, unless otherwise noted		Latest Month or Qtr.	Previous Month or Qtr.	Same Period Year Ago
Capital Expenditures (Annual Rates)				
U.S. Industry, Total	3rd Qtr.	$313.0*	$293.4	$313.7
Manufacturing, Total	3rd Qtr.	117.4*	108.7	118.2
Manufacturing, Durable Goods	3rd Qtr.	53.0*	48.4	56.6
Mining Industry	3rd Qtr.	13.2*	10.9	14.5
Key Indicators, Durable Goods Manufacturing				
New Orders	Aug.	89.3	88.2	73.3
Shipments	Aug.	87.6	85.6	77.0
Inventories	Aug.	170.5	169.6	183.4
Unfilled Orders	Aug.	309.6	307.9	290.5
New Orders, Metalworking				
Capital Goods Producers, Nondefense Industries	Aug.	22.9	21.5	19.3
Capital Goods Producers, Defense Industries	Aug.	4.5	6.9	5.3
Primary Metals, Total	Aug.	10.9	10.4	8.1
Steel (SIC 331)	Aug.	4.6	4.3	3.7
Iron & Steel Castings (SIC 332)	Aug.	1.1	1.2	0.7
Nonferrous Metals	Aug.	5.2	4.9	3.7
Nonelectrical Mach.-Equip. Industries, Total	Aug.	15.3	14.8	13.6
Engines & Turbines	Aug.	6.9	1.0	1.0
Farm Machinery & Equipment (Shipments)	Aug.	0.8	0.8	0.8
Construction, Mining & Materials Hdlg. Equip.	Aug.	2.2	2.5	2.1
General Industrial Machinery	Aug.	1.2	1.2	1.0
Fluid Power Equipment** (Index-1972=100)	Aug.	251	219	157
Metalworking Machinery	Aug.	0.8	0.6	0.7
Machine Tools, Total (Millions $, unadjusted)***	Aug.	137.2	175.1	86.5
Machine Tools, Metal-Cutting***	Aug.	91.0	128.7	60.4
Machine Tools, Metal-Forming***	Aug.	46.2	46.3	26.0
Electrical Mach. & Equip. Industries, Total	Aug.	13.5	14.7	11.6
Elec. Transmission Equip. & Industrial Apparatus	Aug.	1.9	1.7	1.4
Household Appliances	Aug.	1.3	1.2	1.1
Communication Equipment	Aug.	3.9	4.4	4.3
Transportation Equip. Industrial, Total	Aug.	21.7	20.4	15.7
Motor Vehicles & Parts (Shipments)	Aug.	14.6	12.7	11.0
Aircraft, Missiles & Parts	Aug.	5.4	5.0	5.2
Shipbuilding & Military Tanks	Aug.	0.2	1.6	0.8
Fabricated Metal Products, Total	Aug.	10.1	9.8	9.7
Instruments, Total	Aug.	4.0	4.4	3.8

*Est.—Commerce Dept.; **Source: National Fluid Power Assn.; ***Source: NMTBA.

EFFECTIVE OCTOBER 10, 1983

MATERIALS NEWSFRONT

Price & Production Data

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
North East Coast	159	175	175	228
Buffalo	26	30	30	59
Pittsburgh	204	202	184	317
Youngstown	114	104	94	140
Cleveland	143	139	141	164
Detroit	143	104	97	148
Chicago	475	480	472	495
Cincinnati	103	102	97	105
St. Louis	70	69	64	87
Southern	140	141	136	216
Western	87	95	93	136
U.S. Production	1,664	1,641	1,583	2,095

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports. Rail transportation, handling and unloading may be charged to the account of the buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural)..... gross-ton 80.50-86.9*
Old range, non-bessemer ..... gross-ton $32.78
Mesabi, regular-unscreened ..... gross-ton $32.53
Mesabi, non-bessemer.....gross-ton $32.25-32.53**

*80.50¢—Pickands Mather as of 1/27/81.
**86.9¢—U. S. Steel as of 3/15/82. Cleveland-Cliffs as of 2/26/82, Oglebay Norton as of 3/25/82, and Hanna Mining as of 2/26/82.

Steel Production, Composite Prices

(Effective October 10, 1983)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1983	To Date 1982
Net tons, in thousands	1,664	1,641	63,024	58,531
Capability Utilization Rate	57.7	56.9	54.3	49.4

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 9/1/83)	26.822	26.822	26.822	25.195
Pig Iron* * (Net ton = 2000 lbs.)	$213.00	$213.00	$213.00	$203.00
Scrap No. 1 hvy.* * * (Gross ton = 2240 lbs.)	$ 77.50	$ 77.50	$ 77.17	$ 82.17
No. 2 bundles	$ 46.50	$ 46.50	$ 45.50	$ 57.17

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh	$ 82.50	$ 82.50	$ 82.50	$ 94.50
No. 1 steel, Philadelphia	70.50	70.50	69.50	70.50
No. 1 steel, Chicago	79.50	79.50	79.50	81.50
No. 1 bundles, Detroit	81.50	81.50	75.50	83.50
Low Phos., Youngstown	84.50	84.50	84.50	95.50
No. 1 mach'y cast., Pgh	74.50	74.50	74.50	94.50
No. 1 mach'y cast., Phila	95.50	95.50	95.50	117.50
No. 1 mach'y cast., Chi	109.50	109.50	109.50	120.50

*Finished Steel Composite
Weighted index of steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.

* *Pig Iron Composite
Based on average prices for basic and foundry pig iron at representative producing points within the U.S.

* * *Steel Scrap Composite
Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

Nonferrous Prices

(Effective October 10, 1983)
Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum	81.00	76.00-81.00	9/27/83
Copper (C)	70.00-72.00	69 50-72.00	10/7/83
Lead	25.00	23.00-25.00	9/26/83
Magnesium Ingot	138.00	134.00-138.00	6/1/83
Nickel	329.00	350.00	11/25/81
Titanium Sponge	555.00-585.00	555.00	4/29/82
Zinc	46.00	43.00-46.00	8/30/83

ALUMINUM: 99.5%. COPPER (C) = cathode. LEAD: common grade. MAGNESIUM: 99.8% pig, delivered. NICKEL: electro., Port Colborne, Canada. ZINC: high grade.

Antimony, American Laredo, Texas . $2.00
Beryllium-aluminum 5% Be, per lb. contained Be $215.00
Beryllium-copper, per lb. cont. Be $130.00
Beryllium 97% powder 200 ..... $178.00
Bismuth, ton lots ..... $1.85-$1.95
Cadmium, ton lots $1.25
Calcium, ton lots, crown $3.05
Chromium, 99.8% $3.75
Cobalt, 99%, cathode $12.50
Gold per troy oz. $397.40
Indium, dollars per troy oz ..... $3.20-$3.50
Iridium, dollars per troy oz..... $600
Magnesium sticks, 10,000 lbs. $1.91
Mercury, per 76-lb. f.o.b. N.Y. ..$330-$350
Molybdenum, lb. tech. moly oxides, 20 lb. MO can $5.85
Nickel oxide sinter at U.S. points of entry $3.12
Palladium, per troy oz. $140
Platinum, per troy oz. $475
Rhodium, per troy oz. $600.00
Silver ingots, per troy oz..... $10.425
Vanadium $4.94
Zirconium sponge..... $12.00-$17.00
(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb, EX-SMELTER, based on daily market in Penang in Malaysian dollars per kilo.)

Oct. 3—573.34 Oct. 6—573.04
Oct. 4—572.50 Oct. 7—Holiday
Oct. 5—572.21

Scrap Prices

Brass Mill Scrap

(Cents per lb; over 20,000 lbs. add 1¢ per lb)

	Solids	Turning
Copper	69⅜	65½
Yellow brass	61⅛	60
Red brass	65⅛	62
Comm. bronze	66⅜	63
Mang. bronze	62⅜	58¾
Free cutting rod ends	59	58

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	63
No. 2 copper wire	53
Light copper	44

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	59
No. 2 copper wire	49
Light copper	40
No. 1 composition	54
No. 1 comp. turnings	53
Hvy. yellow brass solids	36
Hvy. yellow brass turnings	29
Radiators	45

Aluminum

New mixed clips	50	—51
Old sheet	48	—49
Old cast	48	—49
Clean dry borings	48	—49

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum

Segregated clippings	41	—42
Mixed L.C. clips	35	—36
Old sheets and cast	33	—34
Borings and turnings	24	—25
Duraluminum clippings	29	—30

Copper and Brass

No. 1 copper wire	56	—57
No. 2 copper wire	49	—50
Light copper	44	—45
Radiators	36	—37
No. 1 composition	45	—46
No. 1 composition turn'gs	43	—44
Cocks and faucets	32	—33
Clean heavy yellow brass	30	—31
Brass Pipe	31	—32
New soft brass clippings	44	—45

Lead

Heavy soft lead	8	— 9
Whole batteries	3	— 4
Type metal	15	—16
Electrotype	13	—14

Nickel

Nickel solids	110	—120
Nickel rod ends	110	—120
Nickel sheets, clips	110	—120
Nickel turnings	50	— 60

Zinc

New zinc clippings	15	—16
Old diecast zinc	9	—10

EFFECTIVE OCTOBER 10, 1983

MATERIALS NEWSFRONT

(Effective October 10, 1983) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of *Iron Age* editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 82.00	to	$ 83.00
No. 2 hvy. melting	72.00	to	73.00
No. 1 dealer bundles	99.00	to	100.00
No. 1 factory bundles (auto)	102.00	to	103.00
No. 2 bundles	51.00	to	52.00
No. 1 busheling	97.00	to	98.00
Machine shop turn.	14.00	to	15.00
Shoveling turnings	39.00	to	40.00
Cast iron borings	38.00	to	39.00
Low phos. punchings plate	99.00	to	100.00
Heavy turnings	72.00	to	73.00
No. 1 RR hvy. melting	99.00	to	100.00
Rails 2 ft. and under	101.00	to	102.00
Scrap rails, random lgth.	91.00	to	92.00
RR specialties	100.00	to	101.00
No. 1 machinery cast	74.00	to	75.00
Cupola cast	67.00	to	68.00
Heavy breakable cast	30.00	to	31.00
Stainless			
18-8 bundles and solids	600.00	to	610.00
18-8 turnings	500.00	to	510.00

Chicago

No. 1 hvy. melting	$ 79.00	to	$ 80.00
No. 2 hvy. melting	72.00	to	73.00
No. 1 dealer bundles	98.00	to	99.00
No. 1 factory bundles (auto)	102.00	to	103.00
No. 2 dealer bundles	44.00	to	45.00
No. 1 busheling	97.00	to	98.00
Shredder scrap	85.00	to	86.00
Machine shop turn.	25.00	to	26.00
Mixed bor. and turn.	26.00	to	27.00
Shoveling turnings	31.00	to	32.00
Cast iron borings	44.00	to	45.00
Low phos. forge crop	99.00	to	100.00
Low phos. punchings plate ¼ in. and heavier	109.00	to	110.00
Low phos. 2 ft. and under	105.00	to	106.00
No. 1 RR hvy. melting	94.00	to	95.00
Scrap rails, random lgth.	81.00	to	82.00
Reroller rails	95.00	to	96.00
Rails, 2 ft. and under	102.00	to	103.00
RR couplers and knuckles	92.00	to	93.00
RR car axles	114.00	to	115.00
No. 1 machinery cast	109.00	to	110.00
Cupola cast	97.00	to	98.00
Stove plate	92.00	to	93.00
Steel car wheels	98.00	to	99.00
Stainless			
18-8 bundles and solids	570.00	to	580.00
18-8 turnings	470.00	to	480.00
430 bundles and solids	135.00	to	140.00
430 turnings	100.00	to	105.00

Philadelphia

No. 1 hvy. melting	$ 69.00	to	$ 72.00
No. 2 hvy. melting	57.00	to	60.00
No. 1 dealer bundles	82.00	to	85.00
No. 2 dealer bundles	42.00	to	45.00
No. 1 busheling	82.00	to	85.00
Shredder scrap	83.00	to	86.00
Machine shop turn.	23.00	to	26.00
Mixed bor. and turn.	23.00	to	26.00
Shoveling turnings	40.00	to	43.00
Low phos. 5 ft. and under	80.00	to	83.00
Low phos. 2 ft. punchings	92.00	to	95.00
Electric furnace bundles	97.00	to	100.00
RR specialties	81.00	to	84.00
Rails, 2 ft. and under	94.00	to	97.00
Cupola cast	62.00	to	65.00
Heavy breakable cast	53.00	to	56.00
No. 1 machinery cast	94.00	to	97.00

Detroit

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 59.00	to	$ 60.00
No. 2 hvy. melting	57.00	to	58.00
No. 1 dealer bundles	81.00	to	82.00
No. 2 bundles	40.00	to	41.00
No. 1 busheling	79.00	to	80.00
Drop forge flashings	55.00	to	56.00
Machine shop turn.	33.00	to	34.00
Mixed borings and turn.	22.00	to	23.00
Shoveling turnings	33.00	to	34.00
Cast iron borings	33.00	to	34.00
Heavy breakable cast	35.00	to	36.00
Mixed cupola cast	51.00	to	52.00
Automobile cast	74.00	to	75.00
Stainless			
18-8 bundles and solids	470.00	to	480.00
18-8 turnings	350.00	to	360.00
430 bundles and solids	115.00	to	125.00

Youngstown

No. 1 hvy. melting	$ 71.00	to	$ 74.00
No. 2 hvy. melting	49.00	to	52.00
No. 1 dealer bundles	87.00	to	90.00
No. 2 dealer bundles	37.00	to	40.00
Machine shop turn.	3.00	to	5.00
Shoveling turnings	7.00	to	10.00
Low phos. plate	83.00	to	86.00
Electric furnace bundles	78.00	to	81.00
Galvanized bundles	70.00	to	73.00

Cleveland

No. 1 hvy. melting	$ 67.00	to	$ 70.00
No. 2 hvy. melting	32.00	to	35.00
No. 1 dealer bundles	85.00	to	88.00
No. 1 factory bundles	97.00	to	100.00
No. 2 bundles	22.00	to	25.00
No. 1 busheling	84.00	to	87.00
Machine shop turn.	1.00	to	4.00
Mixed bor. and turn.	1.00	to	4.00
Shoveling turnings	3.00	to	6.00
Cast iron borings	6.00	to	9.00
Cut structural & plates, 2 ft. and under	100.00	to	103.00
Low phos. punchings plate	100.00	to	103.00
Drop forge flashings	37.00	to	40.00
Foundry steel, 2 ft. & under	57.00	to	60.00
No. 1 RR hvy melting	77.00	to	80.00
Rails, 2 ft. and under	105.00	to	108.00
Rails, 18 in. and under	106.00	to	109.00
Steel axle turnings	67.00	to	70.00
Railroad cast	80.00	to	83.00
No. 1 machinery cast	87.00	to	90.00
Cupola cast	60.00	to	63.00
Stove plate	45.00	to	48.00
Stainless			
18-8 bundles	325.00	to	335.00
18-8 turnings	275.00	to	285.00
430 bundles	80.00	to	85.00

Buffalo

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 58.00	to	$ 59.00
No. 2 hvy. melting	47.00	to	48.00
No. 1 busheling	69.00	to	70.00
No. 1 dealer bundles	69.00	to	70.00
No. 2 bundles	30.00	to	31.00
Machine shop turn.	12.00	to	13.00
Mixed bor. and turn.	13.00	to	14.00
Shoveling turnings	17.00	to	18.00
Cast iron borings	12.00	to	13.00
Low phos. plate	69.00	to	70.00
Structural and plate, 2 ft. and under	70.00	to	71.00
Rails, 2 ft. and under	78.00	to	79.00
Scrap rails, random lgth.	62.00	to	63.00
No. 1 machinery cast	67.00	to	68.00
No. 1 cupola cast	48.00	to	49.00

St. Louis

No. 1 hvy. melting	$ 69.00	to	$ 70.00
No. 2 hvy. melting	58.00	to	59.00
Foundry steel, 2 ft.	57.00	to	58.00
No. 1 dealer bundles	69.00	to	70.00
No. 2 bundles	55.00	to	56.00
Machine shop turn.	17.00	to	18.00
Shoveling turnings	24.00	to	25.00
Cast iron borings	35.00	to	36.00
No. 1 RR hvy. melting	79.00	to	80.00
Rails, random length	76.00	to	77.00
Rails, 18 in. and under	92.00	to	93.00
RR specialties	85.00	to	86.00
Cupola cast	70.00	to	71.00
Heavy breakable cast	48.00	to	49.00
Stove plate	75.00	to	76.00
Cast iron car wheels	49.00	to	50.00
Rerolling rails	97.00	to	98.00
Unstripped motor blocks	57.00	to	58.00

Birmingham

No. 1 heavy melting	$ 70.00	to	$ 71.00
No. 2 heavy melting	64.00	to	65.00
No. 1 dealer bundles	71.00	to	72.00
No. 2 bundles	50.00	to	51.00
No. 1 busheling	71.00	to	72.00
Shredder scrap	91.00	to	92.00
Machine shop. turn.	24.00	to	25.00
Shoveling turnings	32.00	to	33.00
Cast iron borings	33.00	to	34.00
Electric furnace bundles	67.00	to	68.00
Elec. furnace, 3 ft. & under	64.00	to	65.00
Structural and plate, 2 ft.	94.00	to	95.00
Structural and plate, 4 ft.	90.00	to	91.00
No. 1 RR hvy. melting	71.00	to	72.00
Scrap rails, random lgth.	81.00	to	82.00
Rails, 18 in. and under	94.00	to	95.00
Angles and splice bars	88.00	to	89.00
No. 1 cupola cast	84.00	to	85.00
Unstripped motor blocks	64.00	to	65.00

Cincinnati

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 62.00	to	$ 63.00
No. 2 hvy. melting	55.00	to	56.00
No. 1 dealer bundles	71.00	to	72.00
No. 2 bundles	30.00	to	31.00
Machine shop turn.	7.00	to	8.00
Shoveling turnings	10.00	to	11.00
Cast iron borings	14.00	to	15.00
Low phos. 18 in. and under	89.00	to	90.00
Rails, random length	70.00	to	71.00
Rails, 2 ft. and under	88.00	to	89.00
No. 1 cupola cast	67.00	to	68.00
Heavy breakable cast	34.00	to	35.00
Drop broken cast	80.00	to	81.00

New York

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 34.00	to	$ 35.00
No. 2 hvy. melting	30.00	to	32.00
No. 2 dealer bundles	22.00	to	23.00
Mixed bor. and turn.	7.00	to	8.00
Machine shop turn.	4.00	to	5.00
Shoveling turnings	10.00	to	12.00
Clean cast, chem. borings	34.00	to	35.00
No. 1 machinery cast	89.00	to	90.00
Mixed yard cast	38.00	to	39.00
Heavy breakable cast	14.00	to	15.00
Stainless			
18-8 prepared solids	490.00	to	510.00
18-8 turnings	390.00	to	410.00
430 prepared solids	70.00	to	80.00
410 solids	60.00	to	70.00

Boston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 45.00	to	$ 47.00
No. 2 hvy. melting	35.00	to	37.00
No. 1 dealer bundles	57.00	to	59.00
No. 2 bundles	31.00	to	33.00
No. 1 busheling	57.00	to	59.00
Shredder scrap	57.00	to	59.00
Machine shop turn.	5.00	to	7.00
Shoveling turnings	9.00	to	11.00
No. 1 machinery cast	95.00	to	100.00
Mixed cupola cast	34.00	to	36.00
Heavy breakable cast	8.00	to	10.00

San Francisco

No. 1 hvy. melting	$ 42.00	to	$ 44.00
No. 2 hvy. melting	34.00	to	36.00
No. 1 dealer bundles	29.00	to	31.00
No. 2 dealer bundles	13.00	to	15.00
Machine shop turn.	6.00	to	8.00
Cast iron borings	6.00	to	8.00
No. 1 cupola cast	85.00	to	87.00

Los Angeles

No. 1 hvy. melting	$ 40.00	to	$ 42.00
No. 2 hvy. melting	29.00	to	31.00
No. 1 dealer bundles	27.00	to	29.00
No. 2 dealer bundles	10.00	to	12.00
Machine shop turn.	6.00	to	8.00
Shoveling turnings	10.00	to	12.00
Cast iron borings	6.00	to	8.00
Elec. furnace, 1 ft. and under (foundry)	85.00	to	87.00
No. 1 cupola cast	87.00	to	89.00

Seattle

No. 1 hvy. melting	$ 61.00	to	$ 63.00
No. 2 hvy. melting	50.00	to	52.00
No. 2 bundles	40.00	to	42.00
No. 1 cupola cast	96.00	to	98.00
Mixed yard cast	83.00	to	85.00

Hamilton, Ont.

Brokers buying price per net ton on cars:

No. 1 heavy melting	$ 60.00
No. 2 heavy melting cut 2 ft. and under	57.00
No. 1 dealer bundles	65.00
No. 2 bundles	35.00
Mixed steel scrap	39.00
Bush. new fact. prep'd.	63.00
Bush. new fact. unprp'd.	55.00
Machine shop turn.	30.00
Short steel turn.	33.00
Mixed bor. and turn.	20.00
Cast scrap	53.00

Houston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 79.00	to	$ 80.00
No. 2 hvy. melting	63.00	to	65.00
No. 2 bundles	41.00	to	43.00
Machine shop turn.	21.00	to	22.00
Crushed turnings	43.00	to	45.00
Shredder scrap	79.00	to	80.00
Cut structural plate 2 ft. and under	94.00	to	96.00
Unstripped motor blocks	57.00	to	59.00
Cupola cast	78.00	to	80.00